

REMARKS

Reconsideration of the application is requested.

Claims 1, 2 and 4-12 remain in the application. Claims 1, 2, 4-9 and 12 are subject to examination and claims 10-11 have been withdrawn from examination. Claims 1, 4, 10 and 11 have been amended. Claim 3 has been canceled to facilitate prosecution of the instant application.

Under the heading "Claim Rejections - 35 USC § 102" on pages 2-4 of the above-identified Office Action, claims 1-9 and 12 have been rejected as being fully anticipated by U.S. Patent No. 6,684,382 to Liu (hereinafter Liu) or 6,584,609 to Pierrat et al. (hereinafter Pierrat) under 35 U.S.C. § 102.

Liu teaches a method and apparatus for providing correction for microloading effects. Amended claim 1 differs from the method described by Liu in that it recites the step of forming a density function and determining the strength of the loading effect by a convolution of the density function with a Gauss function. On page 5, second paragraph of the Office Action the Examiner admits that neither Liu nor Pierrat teaches at least one of these features. These features were recited in original claim 3 and now have been incorporated into claims 1, 10 and 11. Claim 3 is now canceled. Claim 4 has been amended to depend on claim 1. Therefore Liu nor Pierrat can

anticipate amended claim 1.

Under the heading "Claim Rejections - 35 USC § 103" on pages 4-6 of the above-identified Office Action, claims 1-9 and 12 have been rejected as being obvious over Liu or Pierrat in view of U.S. Patent No. 5,552,996 to Hoffman et al.

(hereinafter Hoffman) under 35 U.S.C. § 103.

Applicant respectfully disagrees with the Examiner that a combination of either Liu or Pierrat with Hoffman suggests the subject matter of amended claim 1 of the instant application.

The method described by Hoffmann contains the basic idea of establishing a pattern density value in grid sections of the design pattern of a photo mask. The density values are used to improve the fabrication, process of the integrated circuit chip. See for example claim 1 of Hoffmann. Furthermore Hoffmann describes two main embodiments (see claims 2 and 9) in its method claims:

a) the method including a fabrication step comprising chemical mechanical polishing "CMP", and

b) the method including the step of adjusting the design pattern of the photo mask to reduce etching errors during an etching process.

With respect to embodiment a) Hoffman describes applying a Gaussian function to control the CMP process. See claims 6-8 and column 6, lines 22-38 of Hoffmann. In particular a stop parameter for the CMP process is calculated by the use of a Gaussian function. However, since embodiment a) is related to a CMP process; and not to a correction method for photo masks, a combination of reference Liu and embodiment a) is not possible.

Therefore a person of average skill in the art would only consider a combination of Liu's teaching and embodiment b). Embodiment b) is related to the reduction of etching errors and thus could be read on the correction of loading-effects as defined in claim 1. However, the use of a Gauss function to determine the strength of the loading effect is not mentioned. Hoffmann only generally describes to correct for etch rate variations on the basis of the established pattern density values. No analytical approach is mentioned using the pattern density values. Least of all Hoffmann does not mention the convolution of the density function with the Gauss function to determine the strength of the loading effect. As mentioned above a Gauss function is only mentioned with respect to the CMP process according to embodiment a).

Since embodiment b) of Hoffmann does not describe the use of a

Gauss function to correct for loading effects a combination of references Liu or Pierrat with Hofmann does not suggest the invention according to amended claim 1 of the instant application.

The same arguments apply to the withdrawn claims 10 and 11 and rejoinder is therefore requested.

It is accordingly believed to be clear that none of the references, whether taken alone or in any combination, either show or suggest the features of claim 1. Claim 1 is, therefore, believed to be patentable over the art. The dependent claims are believed to be patentable as well because they all are ultimately dependent on claim 1.

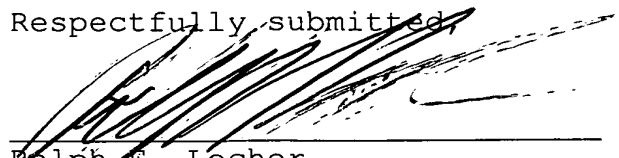
In view of the foregoing, reconsideration and allowance of claims 1-12 are solicited.

If an extension of time is required, petition for extension is herewith made. Any extension fee associated therewith should be charged to the Deposit Account of Lerner and Greenberg, P.A., No. 12-1099.

Please charge any other fees that might be due with respect to Sections 1.16 and 1.17 to the Deposit Account of Lerner and

Greenberg, P.A., No. 12-1099.

Respectfully submitted,



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